BIO-DYNAMICS

A periodical furthering soil conservation and increased fertility in order to improve nutrition and health.

AUTUMN 1951

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SUMMER MEETING

The annual conference of the Bio-Dynamic Farming and Gardening Association, Inc., was held at Threefold Farm, Spring Valley, N. Y., August 30th through September 2nd. Between ninety and a hundred people, ranging from working farmers and gardeners to friends whose interest in bio-dynamics is chiefly dietetic, attended and took active parts in discussion sessions that followed lectures and demonstrations.

The word "radical" is defined in Webster's dictionary as, first, "of, pertaining to or proceeding from the root," and second as "original; fundamental; reaching to the center or ultimate source; affecting the vital principle or principles." The dictionary goes on to the political meaning of the word, etc., etc.

Radical in the second definition above, is a good word to describe some of the ideas that Dr. E. E. Pfeiffer presented to those present. He said, for instance, that *without a proper crop rotation you cannot maintain your soil, no matter what you do.*

While the B.D. preparations and B.D. practices are not only for improving soil but maintaining the improvement, he said, he had seen during his years of consultation work, so many people who begin to build up their soil but do not maintain it. In such cases, it would be better not to begin at all, for one sees the food value of the plants decline, and sometimes things go to a point where people even lose all their capital investment and cannot go further.

In general, he went on, the farm crop rotation should include, with 3 years of arable crops, at least 2 years of grass and clover. And the garden too must have a carefully-worked-out crop rotation, including soil-building plants, for if everybody maintained a constant, intensive crop rotation "you would need more compost and manure than can be produced in the entire world."

He said that where the extensive rotation plan for field growing was properly worked out, ten tons per acre applied once every 5 years can maintain soil fertility.

The dangers in a careless attitude about the condition and consequent values of organic fertilizer materials were also pointed out by Pfeiffer. The Experiment Stations acknowledge, he recalled, that you cannot do without manure. Until recently, however, there was no clear conception of the difference between fresh and composted manure.

Fresh manure is not yet fit to maintain the fertility of a soil—too many of the valuable fertilizer ingredients get lost, for instance in the form of liquid ammonia and volatile gases. And if such manure is simply piled up for a while and left to stand, 50% of its fertilizer value is gone in 6 months, 80% if we wait a few months more. So we see that it is necessary to change the structure and chemistry of manure. This process includes replacing the fresh intestinal bacteria, (Bacillus coli and others), with humus-producing bacteria. Here is a point where Dr. Steiner, in the bio-dynamic preparations which he gave more than 25 years ago, out-distanced his time and gave us a basis for scientific research which, in recent years, has proven the value of this contribution.

The preparations develop controlled "dynamic" effects, and direct the humus-forming process. Composed of plant materials, they themselves are first treated, to direct their own fermentation, by means of the use of ferments and enzymes.*

All organic materials, it was further pointed out, are unstable while they are still going through the breakdown process and have not yet reached the humus state. In fact, some materials presented to the public as humus are not yet at the humus stage. It can be demonstrated that the chemical values of such unstable materials are washed out into the subsoil levels. The fact is that only if you produce a soil with a stable form of humus will you be able to get along with a moderate fertilizing per acre.

Recent experiments in the Salinas area of California have even shown, he said, that you can get results with as little as 1 ton of "humified" compost where you cannot with 5 tons of merely broken-down organic matter.

Dr. Pfeiffer recalled also that the B.D. preparations 500 and 501, used on the soils and plants respectively, have a repeatedly demonstrated beneficial effect with respect to getting the most out of the b.d. treated manures and composts. He added however, that "people are frequently too lazy to use them once a season, though they seem to like to make repeated sprayings of lead arsenate."

He emphasized that the new B.D. Compost Starter and the large scale process for composting municipal garbage were for big operations where *speed* of fermentation to produce neutral, stable humus was essential. For smaller operations, the regular B.D. preparations are still recommended.

* See Bio-Dynamics, Summer, 1948, for a report on detailed analyses of the B. D. preparations and the materials of which they are made.

Of particular interest among his reports of recent experiences with the starter was the story of spraying 30 acres of heavy adobe soil by airplane, the pilot flying less than a foot above the ground and misting the area at a rate of about 2 ounces per acre. The job was done in 15 minutes, at a cost of $5 per acre, the heavy soil being treated in the middle of July. Speaking at the beginning of September, he went on to say that the green manure crop had since been ploughed under, "the soil ploughing as easily as a good soil," and the land was now (at that time) ready for a cash crop. He added that a similar job on 44 more acres was at that time on order.

Dr. William H. Eyster, well-known authority on genetics and plant breeding and at present agricultural director of a lumber company in Virginia and North Carolina, was another speaker at the four-day conference. His subject was "Recent Progress in Organic Management."

Dr. Eyster said that Organic Farming and Gardening really means "natural farming and gardening." Discussing the relationship of the organic movement as a whole to Bio-Dynamics, he said he looked on b.d. as "a more scientific approach to this problem." In the average organic garden, he said, people put everything on the heap and call it a compost heap, depending on nature and weather for results. In the b.d. method, he went on, the process is more controlled, with the use of the preparations and the regulation of moisture conditions in the heaps. He drew an analogy with old methods of wine-making, where people used to press the juices out and then let them stand so that the wild yeasts could go to work, as compared to modern methods using cultivated yeasts.

Earlier that same day, Evelyn Speiden, secretary-treasurer of the Bio-Dynamic Farming and Gardening Association, had spoken on "Food in the Kitchen." Dr. Eyster referred back to this, pointing out that while the foods Miss Speiden talked about come from the soil "few people have the feel of the soil, they think of it, rather, as *dirt*."

And as the soil must produce our food, he went on, so it itself must be fed. He advocated feeding with organic matter in the Fall, using a shredded or chopped mulch. He discussed favorably, in this connection, the "garbomat," a machine which produces a mulch of paper and garbage. (Dr. Pfeiffer said in the course of the sessions that he was at present conducting tests

of this process and these were not as yet far enough along for him to make any comments on it.)

Among the points to be remembered in connection with the preparation of food for the table, as covered in Miss Speiden's comprehensive talk, was the basic one that "Provided that we don't spoil food between the garden and the dining room table," the eating of organically and bio-dynamically grown food is the best way to get nutrition out of whatever diet one is following.

She pointed out that if color and flavor are good, a food under preparation is likely to be still rich in vitamins. Exposure to air, and to heat, she continued, removes vitamins from foods. Miss Speiden advocated that, when possible, one pick food just before a meal, wash it quickly (not letting it soak), and that one should not let it sit around in the light. Rather put it in the refrigerator, where it is dark and cold. Do not cut up food materials more than necessary, rather put them away whole.

She advocated the use of pots and pans with tight lids, making possible "waterless" cooking. Build up steam first, she continued, open the container and put the food in quickly, and then don't open it again until it is cooked. Turn the flame very low during this process.

Miss Speiden noted that it had been estimated that, with cooking as it is all too frequently done, 50 to 90% of the nutrients (vitamins, minerals etc.) are lost by the time food gets to the table.

Since the foods under discussion in her lecture were organically and bio-dynamically grown foods, rather than foods grown with chemicals and lead-arsenate and similar poisonous materials, she urged saving all the water from vegetable cooking. She said she was in the habit of saving all the otherwise unused green material from vegetables, keeping it cold until used and then chopping it up and putting it in a kettle, barely covered with water and letting it cook for periods ranging from 20 minutes to one hour. She commented that the strength of the liquid removed from the kettle was "amazing."

The speaker warned against the dangers of over-cooking vegetables. Pressure cooking is o.k. if used correctly, she said, adding that "a stop-watch system is necessary." She advocated as a good rule of thumb, to observe whether the vegetables come out with good color and flavor. She referred her audience to the

volume "Let's Cook It Right" by Adelle Davis, reviewed by Miss Speiden in the Spring, 1951 number of Bio-Dynamics.

Walter Stuber and Morgan Wolfram told of the developments at Golden Acres Farm, Newtown, Penna., and Dr. Howard Laskey reported on his observations and experiences on his place at Carolina, Rhode Island. Rudolph Schonbeck of Chester, N. Y., speaking on "The Home Vegetable Garden," gave a good deal of valuable practical advice along with stories of his own experiences. Peter Escher demonstrated composting machinery, and Ernest Daniel conducted the conference participants on a tour of Threefold Farm, including visits to the Grade A Raw dairy plant and the herd of cows.

Alice Heckel spoke on "Insect Pests and Some Sane Remedies," pointing out that some of the dusts and sprays, such as rotenone and pyrethrum, can be used against pests without poisoning either the soil or the consumer of the produce. Fred Heckel showed the old documentary film on conservation, "The River," and spoke briefly on conservation in its broad aspects. He referred to Pfeiffer's "The Earth's Face and Human Destiny" as a book that, if more widely read by urban as well as rural audiences, would acquaint people not only with pressing conservation problems but with practical, ecological solutions.

Margarete Buschman gave a bread-making demonstration. The co-workers in Dr. Pfeiffer's Bio-Chemical Research Laboratory were joint hosts with him on a visit by conference participants, and many others took an active part to help make the meeting a success.

A. H. and F. H.

YOU PAY A LITTLE MORE.

As of right now, subscriptions to Bio-Dynamics go up from $1.00 to $1.50 a year, and individual copies from 25c to 40c each. This applies to all new subscriptions, and to all renewals as they fall due. Unexpired subscriptions, of course, are unchanged.

Members of the Bio-Dynamic Farming and Gardening Association, Inc., will continue to receive the magazine, as well as other services, for their dues of $3.00 a year.

We regret the necessity of the rate increase, voted by the directors of the B. D. Assn., but the cost of our printing and paper is rising faster than our circulation figures. We are happy to add that these are showing a steady and healthy increase, and confidently expect this to continue.

SAVE YOUR OWN SEEDS

EVELYN SPEIDEN

Both Miss Speiden and your editors do realize that by the time you get this number of Bio-Dynamics it will be a little too late—to put it mildly—to embark on a seed-saving program for 1951. *But we still think that this is* THE *time to have the article. We know from sad experience with regard to the sort of thing of which one says, "I want to, but I never seem to get at it," that maybe, just maybe, if we read or hear about something in the late Fall, think about it occasionally over Winter, we will* GET AT IT *by the next Spring and Summer. Good luck to you! And do give us reports on what happens.*

Leaning on my garden fence looking things over, I wondered about that soy bean row, fifty feet long with only 5 plants, new seed too and given ample time. The same story again for the third year, with new seed each time from a different firm. Later, finding beans left in the kitchen from my own crop of last year, I filled in the row. Germinating speedily they all came up, yet for some time the five old plants towered above the others and several folks asked why. One told of a similar experience with soybean seed. Others spoke of lettuce, corn, kale, tomatoes and other vegetable seeds of their own saving that had done so much better than commercial seed.

Naturally it should be so! The cycle of growth should be completed in the same area, with proper crop rotations.

Yes, of course, we have always advocated the use of your own Bio-Dynamic seed, but it's one of those things that doesn't get done. "Some day," you say, meanwhile writing to ask if someone else has done it. They haven't. It's up to each individual gardener, and it really is very easy to do in most cases. Here are a few simple rules that will help.

(1.) At the beginning of the season prepare some stakes or strings or some other form of distinctive and noticeable markers to label the plants you select to keep for seed. Make sure everyone who works in the garden knows the meaning of these markers.

(2.) Watch your plants as they develop and select a few—not too many—of the outstandingly healthy ones to preserve for seed. Make your selection on the basis of the *whole plant.* Seed development is an all-season job for you as well as the plant, not just a hurried trip through the frost-bitten garden to sal-

vage the largest seed pods that happen to be left. Make a habit of observing your plants with seed selection in mind. Any moment of relaxation in the garden can be an opportunity to consider the qualities that are desirable in any given plant. You'll form new ideals of what the "well-balanced" plant really can be.

(3.) Remember there are different characteristics to encourage in each kind of plant. In spinach or Chinese cabbage, for example, do not mark the first few nice ones which go to seed and consider the job done. Those are the very ones you do *not* want. The desirable plants are those which continue producing leafy growth longest and send up seed stalks *latest* in the season. Here your final selection must wait until near the end of their growing time, though you may need to make a number of tentative choices earlier so as not to have all the good plants eaten. On the other hand, with broccoli or cauliflower we like best the plants which produce flower heads promptly. So resist that desire to eat the first one—provided the whole plant is a straight, strong specimen—and mark it for seed. Likewise with radishes, save the plant you want most to eat, the first fat root. A healthy top growth should balance the root, but not a premature flower stalk. The same with carrots, beets, turnips and the like, except that these are biennials and normal seed production takes place only the second year, adding the problem of how to keep your best plants safely over winter. However, it's worth the trouble, as over the years you have seed you can rely on and gradually you may even find you are developing new and valuable plant characteristics.

(4.) Let the seeds ripen as long as possible in the garden but not so long as to risk shattering out or feeding birds. Bring in the whole plant and hang or lay it in a dry place until the pods are brittle and the seed comes out easily.

(5.) The easiest home-made way to clean seed is to keep a collection of pieces of wire screening of as many sizes of mesh as you can find. With one size or another you can sift out either the seed or the chaff sufficiently for storage purposes.

(6.) Keeping seed safely over winter requires consideration, as mold or insects can spoil it. Store in a dry, cool place (some seeds can stand freezing, others from heat-loving plants cannot), covered but *not* in air-tight containers. To prevent insects from multiplying in wheat or bean seed, Dr. Pfeiffer has recommended frequent stirring of the seeds. Every day or

so shake up the box or bag containing the seed and also look it over occasionally, removing any spoiling material.

(7.) To make sure your seed is fertile, test it long enough before planting time so that you can buy more if necessary. Count out a definite number of seeds—30 or more, depending on size—and place in a shallow dish or other container on a piece of blotting paper or raw cotton that is *kept* moist. The seed should not actually stand in water, but on the other hand if it once dries out, the test will need to be started again with fresh seed. Best cover the container to prevent rapid evaporation and keep out light, but not so as to shut out air completely, or mold may develop. *Keep in a warm place.* Record the date and see how long germination takes, also what proportion of seeds grow. Naturally some will be slower, like parsley; some will need more heat, like tomatoes, peppers or eggplant. Any batch from which the test seeds mold without sending out shoots is, of course, not fit to plant. If you are uncertain, make a second test and vary your conditions.

The book "Grow a Garden" by Pfeiffer and Riese gives excellent information about seeds in connection with the culture of each plant. As this book is now out of print we quote here a few typical directions.

The Cabbage Family—All types of cabbage cross with one another. If it is not possible to grow different varieties at great distances from one another then one kind only is grown for seed. The firmest heads are selected and stored very carefully over Winter. These are set out early in the following April. They must be set quite deeply and support provided for the seed stalks. The seed must be protected from the birds (Grape gauze). The mature seed stalks are hung indoors and allowed to dry until it is possible to thresh them or remove the seed by hand.

Head Lettuce—Select two or three of the firmest heads from amongst those that are slowest to bolt to seed, and leave them in the garden to blossom. The large inflorescence should be well staked. When a large portion of the seed is already developed pull the plants out and hang them in the shade to dry. All the members of the finch family eagerly lie in wait for lettuce seeds. The removing and cleaning of the seed is a rather tedious task which can be done in the Winter.

Corn Salad—Seeds can be gathered in June from wintered over plants. They should not be allowed to get too ripe as they fall out very easily.

Cucumbers—We can always have our own cucumber seed if we let the earliest maturing, fine, well formed, healthy fruits from healthy plants, hang until ripe. The seeds are scraped out of the fully ripe cucumbers. They are then put in a warm place in a little water to ferment. Afterwards put them in a sieve and wash them, dry gently with a cloth and then spread out on blotting paper until they are completely dry.

Sweet Corn—The earliest, best developed, full-grained ears are allowed to ripen on the stalk. (Hybrid varieties do not produce fertile seed.) When the husks are bleached and straw-like, pick the ears, pull the husks back, tie two ears together and hang them up to dry.

Leeks—Seed bearers are hilled very high to protect them from freezing in the Winter. The plants should stand at least a foot and a half apart in all directions. The blossom stem needs good support. Leeks cross easily with pearl onions. The seeds mature fully only in favorable Summers and in a warm situation.

Onions—Select solid, well-ripened onions, which were grown from sets the previous year. These should be set out as early in the year as possible in sunny, well-protected situations. The blossom stems must be carefully supported. A mulch of mature compost is good. The seeds ripen slowly and must be dried under cover. (They fall out easily.) Ripe seeds are coal black.

Carrots—Carefully keep the best developed roots with medium tops, over Winter. Set these out in March, twelve to twenty inches apart, according to the variety. The cultural directions are the same as those given under Summer care. (Regular weeding and shallow cultivating or hoeing. A mulch of composted oak leaves and bark rich in tannin, is helpful if they are attacked by root lice.) Seed stock must not be forced! Cut the ripe umbels, dry them in the shade, rub the chaff out by hand. Seed propagation only has sense if the area is not surrounded with meadow land, since the wild carrot (Queen Ann's Lace) crosses with the garden carrot.

Beets—The perfectly formed beets which have been kept over Winter are set out early in April about twenty

inches apart. The ripe seed stalks are cut and hung in the shade to dry. Later the seeds are rubbed out by hand.

Radishes—Seed culture occasionally succeeds with early radishes. The plants which bolt to seed *quite late* are left standing. The blossoming plants are very brittle and must be carefully staked. The harvested seed stalks ripen completely when hung in the shade. It is difficult to protect them from the finches.

Early Turnips and Rutabagas—The chosen plants are lightly covered and remain in the ground over Winter. In the Spring they should be uncovered early. Further treatment is the same as for beets.

Peas—As peas cross with one another it is good to separate the different varieties. The first and best pods should be left hanging for seed, and those which mature later picked for eating. A rigid policing is necessary because sparrows are very fond of peas. The seed pods should be healthy and uninjured. Hang them up under shelter to dry or, better still, let them ripen in the garden.

String Beans—The first, best formed beans are left on the vine to ripen. Only May sowings guarantee the prospect of completely ripe seed stock. Pole beans easily cross with one another, also with bush beans; this should be taken into consideration.

Potatoes—For a seed stock choose *only* perfectly healthy, scab-free potatoes from healthy plants surrounded by plants which are also healthy. The plants should be marked beforehand, and the potatoes dug before harvesting the others. Store these very carefully over Winter, dry and frost free, in the cellar or in a pit. They require good ventilation. The best way to store is to bury them in layers of dry sand and spray them with preparation 501. Potatoes stored in this way keep very well.

Tomatoes—Chose healthy, early-ripening, well-formed fruit from good plants. These should not be left on the stalk until they are over-ripe, but should be picked before this. Later, when they have become dark red, scrape out the seeds. Set these in a little water and allow them to ferment. Then put in a sieve and wash off well under the faucet. Spread out on blotting paper to dry. The process of ripening and fermentation must not be too long

drawn out. It can happen that the seeds begin to germinate in the flesh of the fruit.

In all the radio and newspaper advice on "preparedness" have you heard any mention of the wisdom of saving seed? Yet after the preservation of life itself, what could be more important than insuring the future supply of good food? It has been said that susceptibility to harm from atomic radiation is minimized by good nutrition, and recovery from it hastened. Be that as it may, we are following the best ideals of Bio-Dynamic practice by rounding out the cycle of production within our own agricultural unit. It is a pity to strive so well for the best in soil and growth, yet each year to go back to where we started by giving the plants the same inferior start. Quality is cumulative. Now is the time to begin before any emergency arises. It takes several seasons to get a seed-saving program going well. One year is a good seed year for some plants, the next for others, it seems. However, as Bio-Dynamic seeds have been found to retain their vitality longer, one can count on using a supply of most sorts over several years. Then too, if you wish to let us know what you have in excess of your own needs, Bio-Dynamics will be glad to arrange some sort of seed exchange.

THE BEGINNING OF A HEALTHY TREND

At the B. D. Conference at Spring Valley, Mrs. Walter Buschman of Chester told of swapping wheat for oranges. Because many readers, including some who grow relatively small amounts of one thing or another yet more than they themselves can use, might benefit from the idea, we asked her for a note for Bio-Dynamics, telling how it works. She writes:

"When the question of exchanging our B. D. products came up at the conference, I was able to report on our experiences in dealing with Mr. H. S. Richmond of Maitland, Florida. Mr. Richmond just drops me a card whenever he or one of his family needs some flour or cereal, and I also let him know on a postal card when I want some oranges. At the end of the season we straighten out our accounts. We have done that now for a number of years, and find it works very well.

"We have also done the same with Evelyn Speiden. We get the preparations, and also B. D. sticker labels from her (these only to recognized growers. Ed. B. D.) and she gets the flour and cereal from us in exchange."

THE WRONG TURN

FIRMAN E. BEAR, RUTGERS UNIVERSITY

From the Journal of Soil and Water Conservation, Vol. 6, No. 2, April, 1951

. . . . Usually, a nitrogen topdressing or side-dressing produces such marked growth and color effects as to be very readily seen, assuming that a check area is available for comparision. This means that the supply of organic matter, the storage agent for nitrogen, is inadequate. Other evidence of lack of organic matter is found in the increasing tendency toward minor-element deficiencies in cultivated soils that have been brought to a high level of productivity by heavy use of concentrated inorganic fertilizers.

Instead of looking with a jaundiced eye at the efforts of the organic-farming enthusiasts to develop organic matter supplies for use on the soil, the fertilizer industry would do well to interest itself in this problem. There is need for study of the possibilities for recovery of city wastes . . . .

These data point in the direction of the need not only for more organic matter but a variety of kinds of it, no matter whether we are thinking of a cover-crop system or one involving sod crops. Many weeds make highly important contributions in mobilizing minor elements in the soil. Ragweeds and lamb's quarter, for example, are excellent accumulators of zinc. It is conceivable that they might be deliberately grown for the purpose of mobilizing this element.

Sod and cover crops should be liberally fertilized with complete fertilizer. Nitrogen alone is not desirable, since this tends to develop top growth at the expense of roots. A complete fertilizer helps them develop not only larger tops but larger root systems as well that accumulate more mineral elements from the lower soil depths. When such sod and cover crops are worked into the soil, they provide excellent food for soil microbes, and these microbes liberate large amounts of all the essential mineral elements, including nitrogen, from them . . . .

The fertilizer industry represents the most important chemical development, in terms of human values, the world has ever known. Fertilizers can be made to stand between us and any possible deficiency of food for centuries to come. But fertilizers alone, no matter how heavy the rate of application, will not meet the requirements for soils that are producing cultivated crops.

Soil must be fed organic matter in larger amounts than the roots and residues of such crops can provide. This requires manure and well-chosen mixtures of sod and cover crops. If, in addition, we can develop means of producing supplemental compost from city refuse, or by any other means, so much the better. In my opinion, we should lend assistance to efforts that are designed to avoid waste of organic materials. It might well pay to subsidize the processing of such organic wastes as can be made available for use on intensively cropped land.

SOME ORCHARD OBSERVATIONS

PAUL B. COOK

During the year of 1948 I worked in a commercial fruit farm of 150 acres, to become acquainted with commercial techniques. That spring, before the leafing of the trees, I walked all through the 100 acres of apples on their place and found in all the hundreds of trees but one bird's nest, apparently a robin's.

This particular orchard had been following official, state spray and fertilizer recommendations for years, with a bill—for spray materials alone—of $5,000 plus per year. It produced quantities of beautiful, disease-free fruit (all the rest going for cider, apple juice and vinegar), yet it has not been a paying operation. Last year this orchard was sold, with equipment including 3 sprayers, for $25,000. After a years operation by a local man, he sold the equipment and has left the complete farm idle as an impossible paying project.

To get back to birds' nests:—In 1949 I noticed on our own place, in a 4-acre block of Golden Delicious and Stayman Winesap apples (a part of our orchard separated from the rest) four bird nests. This was after the leaves had gone in the fall, and it is possible that the 100 acres mentioned above had *some* more nests, built after I had gone through in the spring. This had been an excellent apple year, as the insect damage was light and the spring rains had not been so excessive as to produce quantities of scab. In 1950 I observed the insect pests to be more numerous than usual (and there was more scab because of the wet spring). At the counting of nests at the end of the season, there were 12 in this same 4 acre block. Apparently the increase in good insect hunting increases the number of birds settling in an area. (Incidentally, this gentleman has used no chemical sprays in his orchards for the last nine years.--ED. B.D.)

SUMMER SHOWERS ARE HEAVY ON GRINDSTONE

S. W. EDWARDS

Who Doth Need A Scarecrow? Our mountain people do not often bother with them in their cornfields. Some send the children to work over nests with shotgun or rifle, while here and there a farmer with 15 or 20 acres in corn will erect a number of male scarecrows, making no claim, however, of their effectiveness.

Across the creek, called "crik" hereabouts, (officially Grindstone Run) in our large, new garden patch we soon found the crows pulling the young corn methodically, laying the shoots roughly parallel and then billing out the soft kernel. As deeply planted kernels won't lift, the green spears are bitten off but the stalk still grows. Nevertheless, we had a lot of replanting to do.

We guessed that a female scarecrow might be more effective than male, and so erected one crowned with straw hat and streamers; T-shirt; burlap bag for skirt; and 1" x 12" strips of bright aluminum arranged on hanging wires to sparkle and flash in sun and breeze.* We have had no further crow trouble. On this garden patch, we plowed in 45 tons of compost.

Public Becoming Conscious of Organic Movement? As time passes we find with increasing frequency interesting references in periodicals and books to the organic movement. We also come across more and more people who have read of, or heard about, or are interested in, in one way or another, organics and organically raised foods. Sooner or later every vegetarian, every patron of a health food store, every believer in natural foods becomes acquainted with the movement. Thus:

1. The cashier of the local bank, having learned some time ago of organics thru a depositor by reason of a tremendous crop of tomatoes from just a few composted plants, drove 65 miles down to Stephens City, Virginia, this Spring for an organic, bagged fertilizer.

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* We suspect it's the sparkling metal rather than the "skirt" that scares 'em. European farmers and gardeners have scared birds that way, rather than with scarecrows, for a long time. But just to lighten the seriousness of life and the earnest search for health, we'd welcome any further comparative "efficiency reports" on male vs. female scarecrows, with or without costume jewelry. The eds.

2. The local paper carried a story of a Frederick banking group visiting an organic farm near Mt. Airy, Maryland.

3. The local salesman for new factory at Sharpsburg, Maryland (Antietam Battlefield—Civil War), called to sell natural phosphate rock, and greensand (potassium rock) each mixed with trace elements. I said, "I imagine you haven't much luck through this area?" He replied, "Well, I haven't done too badly. Just around here I've sold over a hundred tons. Many are trying the natural phosphate rock this year for the first time when they sow wheat. I have much of my own farm under organic treatment, of course."

4. Another local bank employee drove to Sharpsburg for the above product for her garden.

5. Two elderly ladies of long acquaintance surprised us by talking readily of compost, having a composted and mulched garden and well-kept country place with everything in order, including a compost pile—and they read Bio-Dynamics.

6. One of three power company officials who called to see us concerning our protest over the use of 2-4-D and 2-4-5-T on their rights-of-way (such spraying destroys untold amounts of beneficial animal life and acres of useful flowering weeds and shrubs) remarked, on leaving, to the effect that he had heard that commercial fertilizer-raised-food was bad for you and of poor quality.

7. Dr. James I. Hambleton of the USDA Bee Culture Lab., Beltsville, Maryland, recently addressing Maryland Beekeepers at the dedication of their new Apicultural Building, University of Maryland campus, said, among other critical remarks anent the seemingly increasing use of more and more powerful insecticides and sprays, "What we need now is a rollback from our chemical agriculture, and stopping the use of poisonous sprays which kill the beneficial insects as well as the harmful ones."

Sweet Potatoes and Watermelons—Fill Up Your Car! Two friends in the State Beekeepers Association together with wives attended August meeting on Eastern Sho' at Chestertown, seat of Washington College. To get there from Frederick County one drives 86 miles to Annapolis, takes the Ferry over the Chesapeake Bay and thence 34 miles to Chestertown, located in the melon, lima bean and sweet 'tato area of Maryland.

1. Last summer these four found huge piles of sweet potatoes lying in the fields. "No markets," the growers said, "the potatoes all have cracks and won't sell." Can we buy some? they asked one farmer. He laughed, "You don't have to buy any; you can have all you want; take a car full; the more you carry off the less I have to bury."

So they lugged home a carful which lasted until December, "the best sweet potatoes we ever ate" they said.

2. On another occasion these beekeeps found a farmer near the highway disking up his watermelons, a large, fine crop. No sale that will even pay cost of transportation, he said; and added, help yourself; take a big load.

3. Thus the state of American agriculture, year of our Disking and Burying, 1950.

Worth Reading. Interesting additions to your monthly reading list could be: 1 *Herald of Health*, 1329 16th St., NW, Washington 6, D. C., and 2. *Normal Agriculture*, news sheet from Alden Starr of Starland Organic Farm, Basking Ridge, New Jersey. Says Louis Bromfield in an article in the latter, worth the $2.00 annual subscription, "In the simplest terms, poisons, whether in large immediate doses or in long time accumulated amounts, are not good for any animal or human, and under the methods used almost universally in our agricultural, food processing and animal husbandry industries we are using every sort of poison carelessly and in a very wholesale fashion."

And now comes Frank E. Jetmore, in *Herald of Health*: "If civilized human beings would cease using white flour, white sugar and white rice—the health would be improved mightily and the ravages of arthritis, rheumatism and nervous disorders would again be at a minimum. Just think that over."

And Now About the Stone Mill. We have given up entirely any purchase of the small English mill, mentioned on page 9, Spring 1951 issue of this magazine. There were too many complications and too many questions to which we could not get answers, and after having advice from two previous owners of these mills, we decided to let the matter rest.

Meantime we have secured a motor driven, 8″ stone mill, from a manufacturer in the south, and have used it about 4 months. After we have used it for a full year we will be ready to express some opinion of its usefulness and working capacity

in Bio-Dynamics. Meantime we will be glad to answer any questions from any reader who needs a small electric stone-burr mill costing about $150.00.

FAMILY FARMING

The late O. F. Gardner, a respected and, one could truly say, beloved figure in American agriculture, helped the cause of good farming and gardening for a lifetime, both in and out of Government circles. We are proud to recall that before his death, some years ago, he served a number of terms as the first president of the Bio-Dynamic Farming and Gardening Association, Inc. And he did more than merely "lend his name" (a frequent service of prominent figures, and itself by no means one to be sniffed at). Mr. Gardner, until failing health prevented, used, being the man he was, to preside actively at our annual conferences and contribute much of his store of knowledge there, and in various other ways.

It is not, perhaps, known outside of specialized circles that Mr. Gardner is also generally credited with originating, and giving life and meaning to the term "The family farm." Hence a recent folder of the United States Department of Agriculture, entitled "The Family Farm's Future, you can help determine it," may be of an especial interest to readers of "Bio-Dynamics."

Concerned with the necessary business of effective use and conservation of "the tools of production" in this "period of mobilization" the folder is issued in connection with nation-wide county meetings to get the views of the farmers themselves on the effectiveness of the Department's farm programs in relation to the family farm. But since the material will probably not reach all our readers, certainly not the urban and suburban ones, we quote something of its excellent statement of the background that the role of the "family farm" occupies in American agriculture:

What Is Family Farming?

> In a country as diversified as the United States, farms and ranches vary widely from place to place, but the pattern of agricultural production and living which has been known for many years as "family farming" lends itself to the following brief definition:

A family farm or ranch is one which provides the main source of income for the farm family, on which the farm operator (owner or tenant) or members of his family make most of the managerial decisions, participate regularly in farm work, and normally supply a substantial part of the labor needed to operate the farm.

This covers probably 98 percent of the farming units in the United States, as of the 1945 census, excluding part-time farms, share-crop units, and other operations which may be farms in name only and do not contribute the bulk of their operators' incomes.

Family Farming Is a Way of Living

But a mere definition of family farming or ranching is not enough; family farming is also a way of life—a way of rural living and of national democracy. The roots of family farming in the United States are as old and sturdy as the Nation itself. The pattern of land ownership was built into the fabric of this country along the lines of individual ownership and operation of land, without restrictions on selling or leaving the farm to the next generation of the family.

Ownership is not absolutely required for family farming, but it is definitely a goal. Family farming is not only the traditional democratic pattern of land occupancy, but it is also desirable because production increases as security of tenure increases. Ownership by the family operating the farm has historically brought better stewardship of the soil and water resources through sounder attention to conservation.

Measured in acres, family farms or ranches differ in size, even within a farming area, influenced by the crops and livestock produced and the productivity of the land. In fact, one characteristic of family farming is its adaptability to changing patterns of production. Another is that the home activities of the family are combined with operation of the farm. The family farm builds strong communities—communities where tolerance, co-operation, self-reliance, and a love of freedom thrive.

Much of the national emphasis on family farming has been directed toward increasing the opportunities for farm families to operate successful family farms.

Thus, family farming should be regarded as being flexible from the standpoint of size to allow for growth to attain adequate size and operational efficiency. Similarly, the concept of family farming has no arbitrary upward limit on size, so long as the other qualifications are met. Rather, successful operators of *family farms* should be encouraged to expand and increase their production within the pattern of family farming around them.

To justify continued national support and encouragement, family farming must maintain a standard of adequacy and efficiency—in terms of family living and a contribution to the national well-being. This standard may be placed quite high and might even be thought of as a goal, so long as the door of opportunity for advancement is open to farm laborers and operators of small farms.

Operating efficiency is essential to desirable family farming. This means that a family farm must have access to enough resources at least to make full use of family labor and management although in terms of acres, of course, this will vary extremely. An acreage large enough for a family farm with tobacco as the principal source of income would be too small for a wheat farm or a cattle ranch. A family farm or ranch should be of sufficient size and productivity to pay expenses, including maintenance of the farm, and to furnish an income that will provide a comfortable living for a family.

A good standard of family living on such a farm includes family food, clothing, shelter, medical care, recreation and education on a parity with that of urban residents of the same general skill and managerial ability. It should also permit savings to meet the needs of a retirement age comparable to that of urban residents.

CORRECTION

Toward the end of the article by R. G. Schonbeck on growing good sweet corn, Spring 1951 issue, the sentence beginning: "They dislike white corn and are attracted by . . . " should read as follows: "*They dislike white and are attracted by the color yellow.*" The editors apologize and hope that they have not led any trusting readers astray in this connection.

BUILDING A GARDEN

JOHN SCOTT*

The editors met the writer of the following brief report, and his garden, early in this summer season of '51. We went to see him about quite other matters, yet could not but be impressed by the looks and 'feel' of the garden as a whole, flourishing as it was in the midst of a landscape that has a bleak and barren quality about it. We asked for this report for Bio-Dynamics, with the hope that we might discover how he managed to create a garden that was so reminiscent of a good B. D. garden without using the method! There are a couple of clues but we are still not sure that he has provided us with a final solution.

Working with Nature to build a garden on an unfavorable site requires hard bodily labor, mental knowledge and creative persistence; with us it has been a religious rite as well, for we worship in our garden church. Our garden slopes southeast, contains exactly one-third of an acre, is well drained naturally. It is in the foreground of our lookeast landscape as viewed from our picture window toward the Berkshires. This garden is at last surrounded completely by a low stone wall, the stones dug from the foundation of an ancient wide stone fence once separating fields tilled to exhaustion by the tenants of the Livingstone patroons. We were thankful for the stones and for the narrow strip of better soil along the fencerow, but it was a labor of Hercules to dig them out, carry or roll and place them along the new border lines.

After four seasons, '47 through '50, we can now call nearly all the plot garden soil, though it will improve with each year's tillage. It was built without commercial chemicals and is managed without machines or poisons. Different spots require different treatments.

The worst spot in '47 was a bare gully, clay that would not produce even weeds; it is now the richest part of the garden. Treatment: By armpower we carried in loads of dry forest leaves from nearby timber land. Then we cut green leaf brush to place on the dry leaves to hold them down, between layers of brush were cut-green weeds, old hay, anything that would rot. Atop the brushpiles we stacked sods, scalped from a patch of "guaranteed never to die" quack grass. We let the quack sods dry in

* Editor of **Money**, R. D. 1, Craryville, N. Y.

the summer suns until all roots were dead. For three seasons, '47 through '49, we kept piling on organic stuff that would rot. In '50 we raised cucurbits and corn* on the gully ground.

Other spots required less drastic treatment. One-third of the plot was heavily manured by spading under green stuff the first year, sowing deep rooted weeds in August to spade under the succeeding springs. The deep tap roots of such weeds pull up rare food from the subsoil, leave a passage down, when the broken off tap root rots, for water and worms to use. Green stuff, and tillage by our tangleplot technique, did the rest for this first improved third. The rest was planted to strawberries and tomatoes the first year; for they grow on poor soil.

The best tap-rooted weeds to sow for pulling up mineral reserves from deep down are sour dock, dandelion, cultivated sorrel and evening primrose. These make rosettes that grow well until Christmas. We never plant rye or surface feeding plants for green manuring; the seed is expensive and they are not as good as the deep feeding roots and rosettes, which are so much gladder to grow, being so-called weeds or outcasts.

By *tangleplot technique* we mean growing the maximum each season on any plot of ground, as Nature does. After building soil for a season you should be able to grow three crops from the same soil at the same time. We use sweet corn, pole beans and squash or pumpkin. The beans climb the corn and cover the stalks after the ears are harvested. The squash cover the ground, excluding weeds. One hoeing is enough, to give the corn a good start. Nature does the rest. After frost, or before, your weed seed will start and rosettes will soon cover the soil. All this builds the garden.

The builder's rule is simple: spread or bury anything that rots. Keep turning under, with hand tools (a long handled shovel for a spade), organic material until your garden does anything you tell it to do. Animal manures give quick results when properly applied, but are not necessary. Chemicals stimulate but do not fertilize, and many leave poisons in the soil. Avoid them religiously. Look upon your garden as a living part of the whole of creation, cultivate it with reverence. Do all these things so you can live rich, secure and free for a century and take your garden with you when you die.

* In other words, corn and members of the cucurbit family will grow well right on what amounts to the compost heap itself. American Indians used to put a dead fish in each hill. Mr. Scott's description indicates practices very like sheet composting, and on the basis of field and lab. experiences, those working with the Bio-Dynamic Method do not favor such practices. This does not keep this magazine from reporting on interesting gardens and how they were built. Eds. B. D.

JOTTINGS FROM VERMONT

CHARLES W. EDDY

The author of this group of three articles is short, witty, and a good talker as well as a hard worker. The editors can hear him speaking as they read. Seriously though, he has had at least one garden, sometimes two or three, for 35 years. The first 30 he has used commercial fertilizers, sprays, the works. For the last 5 he has been working organically. Three years ago he adopted B. D.

OUR FARM

This was a real New England Farm where everything that was eaten here was raised on the place—that is everything but flour and sugar. They did have some white sugar for company although the family had to get along most of the time with maple sugar.

When we first came here one of the neighbors told me that this was a wonderful country seven months of the year. Around the first of November we go south to Rhode Island for the winter. I was talking with Grandma Ross and I said, "I understand that it gets rather cold here in the winter time. Someone told me that it went down to from 30 to 40 below zero." and she said, "It doesn't stay more than 20 below for any great length of time."

The second year that we were here, the last of October, it got rather cold in the night. It held us up here for a week longer than we wanted to stay and cost more than $100.00 for auto repairs. The engine froze and cracked the block.

The elevation of our farm is 2,200 feet. We can see for miles toward the north the east and the south. When we first came here, from our front yard, there wasn't a house in sight. We were quite secluded. But when the leaves, on the trees, left in the fall we could see two houses to the east and the nearest one wasn't more than two miles away. Now we feel rather penned in.

The other day a man stopped at the house and asked me if he could fern in our woods. We sometimes see men coming out of the woods with large racks on their backs nearly as large as adult cots. They are piled high with ferns. The ferns must be genuine, no breaks, of a certain size and length and a dark green hue. They are broken off, piled on the racks and taken home. They are then tied in bundles of 25 ferns each, the ends cut off

to a uniform length, taken to the village and sold for $1.20 for 40 bundles. Besides bringing up her seven children and doing the many things that the New England housewife used to do Grandma Ross gathered ferns. The difference was that she got only 25c for 40 bundles of 25 ferns each or for 1,000 ferns. Also, she gathered them in baskets instead of on a rack.

Prices have changed a lot in the past 100 years. I was looking at an old account book and saw this item, Lamb 2c a pound, another from my grandfather's pocket account book, 7½ pounds turkey $1.00. My grandfather was a printer. One of his sample books lies open before me now. Dress shirts with one collar $5.00 per dozen. This is dated 1875.

In the late winter-early spring days when it was winter at night and spring in the daytime the maple sap would flow intermittently. The Rosses hitched the yoke of oxen to a wooden sled, on which had been mounted a large tank. The oxen were driven around among the maple trees. The sap was poured from the drip buckets into the tank, taken to the sugar house and boiled for many hours in large flat pans. One barrel of sap was reduced to one gallon of syrup. Further boiling reduced the syrup to maple sugar. Much of the Rosses' syrup was sold for 75c to 80c per gallon. Since we have been here it has sold for as much as $10.00 per gallon.

If we had the oxen, the sled, if the sugar house was still standing, we were here at the right time of the year and we had the inclination, we too could drive the oxen around with gees and haws and gather sap from 200 trees at the edge of our clearing without going into the woods.

OUR HOUSE

Some 200 years ago a John Ross, accompanied by his beautiful, blushing bride, left Connecticut and came to Readsboro, Vermont. There were Indians living down in the village on the bank of the river. The Rosses cut down trees, in the woods, that they had selected for their home, built a log cabin and spent the rest of their lives there. If you come to visit us we shall show you the location of this cabin in the corner of where we now have our orchard.

This John the 1st had a son John who was John the 2nd. This second John built the house in which we are now living. We were the first to move in after the descendants of the original settlers moved out.

There is a kitchen, a dining room, a sitting room, a sink room, a pantry, a bathroom and sometimes a bedroom. It's all the same room. This room is 12′ x 25′. Besides this main room there are five bedrooms and a summer kitchen. This kitchen affords a place in summer to do the cooking and keep the rest of the house cool and comfortable.

Three large hand-hewn timbers support the upper floor. They are 26′ long. The ceiling is formed by the boards of the upper floor. When we came here the timbers and the floor boards did not show. The ceiling was plastered. One day, when I was here alone, I took the plaster and laths down. I think it was the hardest and dirtiest job that I ever had. It took me from early morning to late evening. I didn't even stop to eat. Some of the laths were 12 inches wide and 12 feet long.

This is a wonderful house from the sill up. Perhaps I should say from the place where the sill used to be. In some places it is entirely gone.

In the fall it was the custom to throw up the sod around the house so that the foundation was entirely covered. This was done to keep out the winter winds and the 20° below plus weather.

Ten years ago John Ross the 3rd was covering the foundation for winter when he had a heart attack from which he never recovered. The next spring John the 3rd wasn't here to uncover the foundation so the sod remained in place for the next five years, or until we came to live on the farm.

When we removed the sod and soil, which had been changed to humus, we discovered that parts of the sill had also changed to humus. It is fortunate that this compost pile John the 3rd had unknowingly built around the house was not treated with the Bio-Dynamic Preparations. If it had been I doubt if there would have been any sill left at all.

It is surprising what habits will do. After standing erect for 150 years the old house has formed habits which apparently it cannot break.

We have outside plumbing of the year 1800 vogue. Our assorted sizes triple accomodations are in a little house. For cold and stormy weather it is conveniently located at the far end of the woodshed, which itself is connected to the house.

The four tons of lime that we got before we went Bio-Dynamic do a valuable service in keeping the little house pure and

sweet. Since this is the only use that we have for this lime we must have at least a hundred year's supply on hand.

The roof covering was gone in several places so that there were a dozen holes where the rains came through. To say the least it was a novel experience to take an umbrella with me when I retired.

If Edgar A. Guest was right in saying that "'It takes a heap of living in a house to make a home," this our house should be a real home.

OUR SUCCESSFUL FAILURES

We have no electricity here on the farm. We may have it some time. Who knows? There is a lot of talk about it but no juice. This would be amusing if it wasn't that we want and need it so badly. It would be amusing because right here in Readsboro is one of the large hydro-electric plants that furnishes current all through New England. The water for this plant comes through a large tube, which is cut in solid rock, through the mountain. It comes from a made, nine mile long, lake. This lake is held in position by a 200 foot high dam. It is the highest earth dam in the world.

They have electricity all around us in every direction. In fact they even have it in Readsboro, except on South Hill where we live. There are some 35 of us who have signed petitions and are hopefully and impatiently waiting for it.

Because we have no electricity and the battery set is on strike, I have just been out listening to Arthur Godfry on the auto radio. He was talking from his farm in Virginia and said that as he looked out on the fields and meadows, everything was yellow and dry. In fact that they had hardly any rain all summer.

As I look at the fields and hills, from where I am now writing, except for some of the trees that have already turned yellow, gold and red, I see all shades of lush green growth. We have had more than 50 days of rain out of a possible 90 during June, July and August.

In 1949 we had no rain, to amount to anything, all through the growing season, still, except for some of the squashes at the edges of the garden, none of the vegetables looked as though they could use any more water. I have heard that a good humus soil will hold 10 times as much moisture as a sandy soil. This must have been the reason that our garden did so well, because

nearly all of the water that the garden received was the dew that fell at night. One of our neighbors carried barrelfulls of water to his garden and still he lost nearly everything.

This year we can tell a different story. We were well prepared for too little moisture but not for the oceans of water that were standing over our garden a good part of the summer.

Besides being damp it was cloudy and cold. The cabbages that we set out the first of June had not doubled in size by the first of August. We didn't get a single tomato, more than 1½" in diameter. The few potatoes that we did get were excellent but quite small.

I am reminded of a Vermont farmer who was telling me about his potato crop. He said, "We got some as big as marbles, a few as big as peas and then we got a lot of little ones." I can well believe that what he told in jest might have been true this year.

However, I do doubt the veracity of one of the grange sisters, who told me about her husband's experiences in raising potatoes. She said, "The first year he raised enough for us. The second year he raised enough for our grandchildren, our children and us. This year he raised so many that we sold a lot. He was going away for the day and told me sell some, if I got a chance, to the people who went by the house. 'But,' he said, 'Don't sell less than a bushel to a customer, because we don't want to cut a potato.' "

I also question the sincerity of one of the other grange members. She said that when she was a child they hitched the oxen to a plow, cut a furrow the length of the farm, and planted one potato eye. Later, after it had had a few days in which to grow, when they wanted potato for dinner, they uncovered one end of the potato, cut off what they wanted and recovered it.

95% of our seeds rotted in the ground. I planted sunflowers twice in the same place. Not one grew to be two inches high. In one section of the garden I sowed wheat, rye and white clover. Not a single seed germinated.

Then I made a discovery. Even after the water had lessened so that there was some comparatively dry ground, nothing would grow. The soil was dead. Where I picked 22 earthworms off of a spading fork of soil I was now fortunate if I found two or three. I assumed that the aerobic bacteria were also dead. They too had been drowned. The minerals were

still there. Even the humus remained, but the life had gone out of the soil. Nothing would grow well.

I threw up the soil in a mound so that the vegetable roots would not be standing in water, and planted beans, five times, consecutively, at 10 day intervals. Not one developed to produce a single blossom, to say nothing of a bean.

The onions in the wet section were not one third as large as in the better drained part of the garden.

One side light, which although of no real value, may be interesting. I left a spading fork on the ground all day. When I removed it at night I picked 30 slugs from the handle. We used no mulch in the wet part of the garden so that cannot be blamed for the slugs. We did mulch in the better drained section of the garden but the slugs did no damage there.

Last year we had the best garden that we had ever had in our 34 years of gardening. This year we have had the worst, that is it seemed so through most of the growing season. Now that some of the moisture has subsided from the soil and our eyes, we can see that this, which we thought was the year of our greatest failures, was actually the year of our greatest successes. Since the crop for which we work the hardest, and the one for which we crave the heaviest harvest, is knowledge. And since this crop has been the largest this summer that we have ever known, we can truly say, "This is the year of our most successful failures."

NON-SPECIALIST CONSERVATION

"The training of student-citizens with the awareness of the ever-increasing need for conserving natural resources" is the chief aim of a new study major at Barnard College, announced by Columbia University recently.

The subject matter will include problems of how best to utilize water and mineral resources, to preserve forests, and prevent soil erosion. Directors of the program point out that these are questions of utmost importance to civilization, and require the attention of competent personnel. But the still relatively unique, and interesting feature of the project at this women's college is the further explanation of the directors that "Women must become aware that the promotion of programs of conservation in their own communities is a life-long avocation."

BOOK REVIEW

WHOLE GRAIN COOKERY: A Gourmet Guide to Glowing Health. By Stella Standard. 240 p.p. New York, The John Day Company, $3.95

"More good ways to use rice than I ever saw together, and so many good suggestions for left over rice too," remarked a friend looking over this book. And why not, as the author says, when rice is the world's largest crop and the staple food of over half the human race. With an eye to good nutrition, she recommends using nothing but brown rice, that is the whole grain after only the husk is removed. Seeing it first you'll probably think, "Why do they call it brown?" True it is but little darker than the ordinary kind, yet this shade of color makes a vast difference in its nutritive value. The process of polishing to make it white takes away germ and outer bran, including the minerals, vitamins, fats and practically all the food except starch. More rice is eaten in China than in any other country and unfortunately many Chinese are as blind to the virtues of brown rice as are Americans to whole wheat bread. In a school for young married women in China, we were accustomed to near rebellions each fall among new students before they became used to the brown rice always served. Later they learned to appreciate its superior flavor and to understand the danger of beriberi among poor people depending on polished rice without sufficient supplementary food.

Rice is appreciated by other peoples too, as in the recipes for Creole *pilau*, the Italian *risotto*, the Spanish *arroz*—gourmet dishes we should all enjoy often. The many variations of these, given in this book, are not the complicated dishes you might expect, but easy to make. Here are recipes from many lands. A friend from India exclaimed delightedly over several that reminded her of home. I was much pleased to discover one I had often wished for, a one-dish meal commonly served on trains in China and credited to Chiang Yee's "The Silent Traveller," called "Wu-se-fan" or Five Color Rice. Although I have not been able to find out anything about her, I think Mrs. Standard must have lived in China, so many are the Chinese touches here and there, and Pearl Buck writes the preface to the book.

Oh yes, this is much more than a rice cook book. There are also chapters on corn, oats, sunflower seed, yeast breads, quick breads, hot breads, pancakes and waffles, cakes and cookies, pies, puddings and confections, with an especially interesting one on

miscellany of grains, including wheat, rye, millet, gruenkern, bulghur, hominy, soy grits, soybean sprouts, barley, kasha, lima beans, sesame seed and some fine recipes for the use of wild rice.

Fascinating old names for ancient dishes of many countries are here,—Kedgeree, Poulet au riz, Gnocchi, Jambalaya, Eight Precious Pudding, Congee, Polenta, Poulet au Ble; and homely Johnny cakes, hoe cakes, grits, mush, pone, spoonbreads, Quick Haggis, dodgers, turtles and Sally Lunn. All are made with unrefined and little processed grains, much as these old dishes were originally, no doubt, before some of our present bad food habits developed. There are varied recipes for nourishing soups, puddings, meat loaves, meat balls, stews, croquettes, stuffings, souffles and many kinds of porridge; also fritters, biscuits, muffins, puffs, dumplings and popovers.

A generous collection there is too, of modern dishes made wholesome,—doughnuts, pie crusts, cookies, gingerbreads, shortcake, cinnamon bread, spice cakes, Swedish and Bohemian rye breads, even to chocolate fudge and layer cakes and—most surprising of all—angel food cake. Altogether there are nearly five hundred recipes of tasty, satisfying and nutritious dishes, not only good eating but the sort of food that, as the author states, will make the body "lithe and firm, tending to lose its bloatedness and flabbiness. The reasons are that the wholegrain dishes are so satisfying and are so easily digested that the desire for white bread and rich pastries becomes less strong .... As shown by the Food Value Chart . . . the carbohydrates (starch and sugar) are displaced by the vitamins and minerals that are left intact in the whole grains, so the problem of gaining weight is reduced."

For the size of the book, the price seems high, but it is to be hoped there may be demand enough to bring it down in later editions.

EVELYN SPEIDEN

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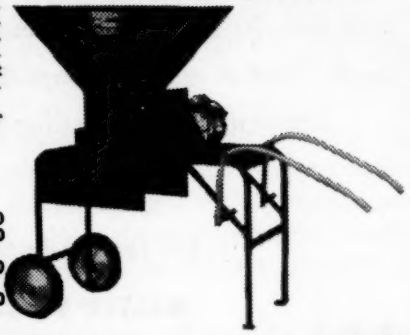

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Snap your soil back to full fertility with ENZ-BAC. It is a carefully formulated mixture of bacteria, yeasts and other fungi, actinomyces, and enzymes; reinforced with all essential nutrient elements; and is rich in vitamins and hormones.
ENZ-BAC converts all kinds of wastes into organic fertilizer, stimulates the action of beneficial organisms in the soil, deodorizes garbage cans and toilets, decomposes garbage rapidly. With ENZ-BAC compost can be made without manure. When the raw materials are shredded, compost can be made with ENZ-BAC in less than a month. ENZ-BAC can be used itself as an organic fertilizer without injuring growing plants.

Grist Mills for the Home*

A hand-operated grist mill, with adjustable burrs, for making your own whole-grain flour or cereal. Capacity, Coarse: 1 lb. per minute. Fine: ¼ lb. per minute. Grinds all grains, coffee, spices $8

O. C. Family with crank $10.00
O. C. Family with wheel $12.50
F. O. B. H

Corn and Nut Mill .. $6.25
Grinds corn, soft or hard oily grains. Sesame seed, Peanuts, Almonds and other nuts, also Dried Fruits. Coffee fresh ground for any method; a 1 lb per minute. F. O. B.

Shred–O–Mat *

Stainless steel cutters. Shreds fruits, vegetables. Coarse, fine, slices and grates.

$7.98

Terms: Cash with order. * Prepaid—Add 10% west of Mississippi.

PHILIP S. WELLS, F.R.H.S.

ORGANIC IMPLEMENTS AND PRODUCTS CO.

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